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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/365,517	08/02/1999	HAMID K. AGHAJAN	M-7793-US	1904

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APPLIED MATERIALS, INC.
2881 SCOTT BLVD. M/S 2061
SANTA CLARA, CA 95050

EXAMINER

PATEL, JAYANTI K

ART UNIT	PAPER NUMBER
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2625

DATE MAILED: 04/13/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/365,517

Applicant(s)

AGHAJAN, HAMID K.

Examiner

Jayanti K. Patel

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 January 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. Applicant's request for reconsideration filed January 29, 2004 has been fully considered but are not deemed to be persuasive.

Response to Arguments

2. Applicant's arguments filed January 29, 2004 with respect to claims 1-7 rejected under 35 U.S.C 103 in view of Lee over Mishima with regard to a memory for storing image data have been fully considered but they are not persuasive. Lee discloses a system for characterizing defects on semiconductor wafers by aligning reference and test images (figure 2A, element 210) including a memory for storing two dimensional image pixel data (column 2, lines 15-42) with pixel intensities. Additionally, Lee plots such data using x-y and z location data (figure 4B). Further, any system similar to that of instant application, Lee or Mishima would necessitate a memory array with plurality of locations. As a matter of fact, memory in general, have plurality of locations to store plurality of data information (pixel data in the instant case) as being disclosed by Mishima (column 8, lines 5-49 and column 7, lines 20-34). Contrary to the applicant's assertion, Mishima discloses plot of gray levels pixels in each image (figures 10a-10c).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-7 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Lee et al. (US 5,808,735) in view of Mishima et al. (US 4,823,194).

Regarding claim 6 and 7, Lee discloses a system for characterizing defects on semiconductor wafers comprising: an image acquisition unit being operable to acquire first image and an associated second image (column 4, lines 44-57), the first and second images having a plurality of pixels (column 6, lines 21-25) with each pixel being defined by a location coordinate (column 5, lines 32-37) and gray level (column 2, lines 25-34).

Lee discloses memory for storing the image data (column 6, lines 45-50) without any specific details regarding plurality of memory locations and a processor to plot gray levels of pixels.

In the same field of endeavor, however, Mishima discloses a system for processing gray scale images comprising a plurality of memory locations storing the first and second image data (column 7, lines 34-44 and figure 5, element 54); a processor being operable to plot the gray levels of pixels corresponding to each image (column 5, lines 22-35 and figures 2a-2d).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the plurality of memory locations and a processor to plot gray levels as taught by Mishima in the system of Lee because Mishima provides Lee with a gray level image processing system which can process gray scale images clearly at a high speed even if the original image has a complicated background. Additionally, the use of plurality of memory locations to store images and plotting gray levels of image pixels are routinely performed.

As to claims 1-5, the steps claimed as method is nothing more than restating the function of the specific components of the apparatus (including aligning the first image with a second image, video monitor and plotting a threshold window; see Lee, figure 2A, step 210, figure 1, element 60; and Mishima figure 6) as claimed above and therefore, it would have been obvious, considering the aforementioned rejection for the apparatus claims 6-7 above.

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

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extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Other prior art cited

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Hennessey et al. (US 5,515,453) discloses a system for processing images in symbolic space (figure 26a and 26b).

Gallarda et al. (US 6,539,106) discloses a feature-based defect detection system (figure 3, steps 325 and 335).

Merryman et al. (US 4,886,958) discloses an autofocus system for scanning laser inspector.

Contact information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jayanti K. Patel whose telephone number is (703) 308-7728. The examiner can normally be reached on Monday-Friday (7:00-4:00), alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on (703) 308-5246. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JKP



Jayanti K. Patel
Primary Examiner

April 5, 2004